

WHAT IS CLAIMED IS:

1. A stepwise scheduling method used in an output-buffered switch system for broadband networks to guarantee quality of service, the switch system having a plurality of flows i ($i=1\sim N$), each flow i having an output queue, the output queue having a plurality of windows, each flow i having a corresponding normalized weight w_i and a credit c_i , and using a window index d_i to point to a window, the method comprising the steps of:

(A) when packet P_i of flow i arrives, determining whether the credit c_i of flow i is larger than the size of packet P_i ;

(B) if the credit c_i of flow i is smaller than the size of packet P_i , adding the normalized weight w_i of flow i to the credit c_i , incrementing the window index d_i , and executing step (A) again;

(C) if the credit c_i of flow i is larger than the size of packet P_i , the packet P_i is placed into the window pointed by the window index d_i ; and

(D) subtracting the size of the packet P_i from the credit c_i .

2. The stepwise scheduling method as claimed in claim 1, wherein the normalized weight w_i , credit c_i and window index d_i are stored in a table.

3. The stepwise scheduling method as claimed in claim 2, wherein, in step (A), it is determined whether the credit c_i of flow i is larger than the size of packet P_i based on the weight w_i , window index d_i and credit c_i corresponding to the flow i stored in the table.

4. The stepwise scheduling method as claimed in claim 3, further comprising a step (F) for writing the updated window index w_i and credit

c_i into the table.

5. The stepwise scheduling method as claimed in claim 4, wherein the packets placed in the windows of the output queue are output sequentially.

5 6. The stepwise scheduling method as claimed in claim 5, wherein, when all packets are pushed out and the window is empty, the table is updated to have initial values.

7. The stepwise scheduling method as claimed in claim 1, wherein the normalized weight of the flow i is $w_i = W \times w_i^* / (w_1^* + w_2^* + \dots w_N^*)$, w_i^* being the weight of flow i and W being the size of a window.

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